



Paper Code : EME: 404
Paper Name : Environment and Ecology

Teaching Hours (Per Week)		Examination Scheme		
TH. (hours)	Pr. (hours)	Internal	External	Total
		Th. (marks)	Th. (marks)	100 (marks)
4		30	70	

Lectures = 68 Hours

Objective:

Introduces the student about the basic concept of our environment .

Detailed Syllabus

UNIT I

[15 Hours]

Conceptual Background

Meaning of Environment, Elements of Environment, Man’s relationship with the environment and man–nature interdependence, Need for environmental education, Eco-system, ecology and habitat, Food Chain and Webs, Concept of Community, Energy Path, Energy Flow, Energy Budget, Trophic Level, Ecosystem and natural balance.

UNIT II

Population and environment

[12 Hours]

(World’s) Population numbers, density and growth, Trends in population growth in India, Identification of areas of high, medium and low density in India, Impact of Population Pressure on India’s food availability, water and natural resources, Malthusian doctrine and the concept of a stable population (demographic transition) Population growth in recent times and its impact on global environment, Concept of carrying capacity of environment, sanitation, agriculture.

UNIT III

Environment as resource and Consequences of Human Interventions

[14Hours]

Concept of resources, Types of resources: Renewable and non-renewable resources, Shortages of over- Consumption, Conservation of Resources and Alternative Strategies, Global warming and Green House effects, ozone held’s. Deforestation/Desertification

UNIT IV

Effects of Biosphere and human interventions

[12 Hours]

Species vulnerability, Endangered species, Genetic Resources ,Concept of bio-diversity and bio-reserves, Environmental pollution, Pollution, pollutants and health effects of (a) Air (b) Water (c) Soil (d) Noise (e) Radiation (f) Toxicity in food chain

UNIT V

[15 Hours]



Environmental problems, North- East aspects, effects of development, management and people's participation

Environment and human activity, major environmental problems, Extent and type of forest in the N.E. Extent, Processes, Causes of Deforestation in N.E. Flooding and causes of flooding in N.E. Shifting cultivation and its impact on Land- degradation Forest Policy, conservation and afforestation, Concept of watershed management, Predicament of man and sustainable development, Peoples' movement in protecting environment, case of Green movement, Chipko movement, Bishnoi efforts The Narmada debate.

Books for study:

1. Arvil, *Man and environment: Crises and strategy of choice*. Penguin, Harmondsworth, 1967.
2. Odum, E.P., *Fundamentals of ecology*, Prentice Hall India.
3. Thomas, W.L. (ed.), *Man's role in changing the Face of the earth*, University of Chicago Press, Chicago, 1956.
4. Ehrlich, P.A.H. et al, *Eco-Science: Population Resource and Environment*, Freeman, San Francisco, 1977.
5. Meadows, D.L. & Meadows, D., *The limits to growth*, London.
6. A.C. Mahapatra et.al(ed.), *Population Problems*, NEHU Foundation Course Series, Shillong, 1983.
7. Sinha, A.C., *Beyond the Trees, Tigers and Tribes: Historical Sociology of the Earth*, Himala-Himalayan Forests (Chapter IV, V & VI), Har Anand Pub., Delhi, 1993.